What is claimed is:

1. An electric drive vehicle comprising:

a frame;

a wheel, having a hub with at least one sprocket, the wheel rotatably mounted in the frame;

a pedal crank assembly rotatably mounted in the frame;

a pedal sprocket fixedly attached to the pedal crank assembly;

an electric motor, having an axle and a rotatable outer case, the motor mounted to the frame by the axle;

a sprocket fixedly mounted to the outer case of said motor;

a freewheel rotatably mounted to the outer case of said motor, the freewheel having a sprocket;

a first chain engaged to said motor sprocket and a sprocket on the hub for transferring rotary motion from the motor sprocket to the hub sprocket; and

a second chain engaged to said freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the freewheel sprocket;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison.

2. The electric drive vehicle of claim 1, wherein said vehicle is a bicycle and wherein said hub is a multi-speed hub.

3. The electric drive bicycle of claim 2, wherein said multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

4. The electric drive bicycle of claim 2, wherein said multi-speed hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the chain to engage any of said sprockets while riding said bicycle.

5. The electric drive vehicle of claim 1, wherein said electric motor is a brush-less, direct current, slow speed, gear-less, bicycle wheel hub motor.

6. An electric drive vehicle comprising:

a frame;

a wheel, having a hub with at least one sprocket, the wheel rotatably mounted in the frame;

a pedal crank assembly rotatably mounted in the frame;

a pedal sprocket fixedly attached to the pedal crank assembly;

an electric motor, having an axle and a rotatable outer case, the motor mounted to the frame by the axle;

a first sprocket fixedly mounted to the outer case of said motor;

a first freewheel rotatably mounted to the outer case of said motor, the freewheel having a sprocket;

a first chain engaged to said first motor sprocket and a sprocket on the hub for transferring rotary motion from the motor sprocket to the hub sprocket;

a second chain engaged to said motor freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the freewheel;

a second freewheel having a sprocket rotatably mounted to the hub;

a second sprocket fixedly mounted to the outer case of said motor;

a third chain engaged to said hub sprocket and said second motor freewheel sprocket for transferring rotary motion from the hub to the second motor freewheel sprocket;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison, and whereby said wheel can drive said motor for regenerative braking.

7. The electric drive vehicle of claim 11, wherein said vehicle is a bicycle and wherein said hub is a multi-speed hub.

8. The electric drive bicycle of claim 12, wherein said multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

9. The electric drive bicycle of claim 12, wherein said multi-speed hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the chain to engage any of said sprockets while riding said bicycle.

10. The electric drive vehicle of claim 11, wherein said electric motor is a brush-less, direct current, slow speed, gear-less, bicycle wheel hub motor.

11. An electric drive vehicle comprising:

a frame;

a wheel, having a hub with at least one sprocket, the wheel rotatably mounted in the frame;

a pedal crank assembly rotatably mounted in the frame;

a pedal sprocket fixedly attached to the pedal crank assembly;

an electric motor, having an axle and a rotatable outer case, the motor mounted to the frame by the axle;

a first sprocket fixedly mounted to the outer case of said motor;

a first freewheel rotatably mounted to the outer case of said motor, the freewheel having a sprocket;

a first chain engaged to said first motor sprocket and a sprocket on the hub for transferring rotary motion from the motor sprocket to the hub sprocket;

a second chain engaged to said motor freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the freewheel;

a second freewheel having a sprocket rotatably mounted to the outer case of said motor;

a second sprocket fixedly mounted to the hub;

a third chain engaged to said hub sprocket and said second motor freewheel sprocket for transferring rotary motion from the hub to the second motor freewheel sprocket;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison, and whereby said wheel can drive said motor for regenerative braking.

12. The electric drive vehicle of claim 11, wherein said vehicle is a bicycle and wherein said hub is a multi-speed hub.

13. The electric drive bicycle of claim 12, wherein said multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

14. The electric drive bicycle of claim 12, wherein said multi-speed hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the chain to engage any of said sprockets while riding said bicycle.

15. The electric drive vehicle of claim 11, wherein said electric motor is a brush-less, direct current, slow speed, gear-less, bicycle wheel hub motor.

16. An electric drive vehicle comprising:

a frame;

a wheel, having a hub with at least one sprocket, the wheel rotatably mounted to the frame;

a pedal crank assembly rotatably mounted in the frame;

a pedal sprocket fixedly attached to the pedal crank assembly;

an electric motor, having an axle, the motor mounted to the frame;

a jackshaft rotatably mounted to the frame;

a first sprocket fixedly mounted to the axle of said motor;

a second sprocket fixedly mounted to the jackshaft;

a first chain engaged to said first motor sprocket and the sprocket on the jackshaft for transferring rotary motion from the motor sprocket to the jackshaft;

a first freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a second chain engaged to said jackshaft freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the jackshaft;

a third sprocket fixedly mounted to the jackshaft; and

a second chain engaged to said third jackshaft sprocket and said hub sprocket for transferring rotary motion from the jackshaft to the wheel.

17. The electric drive vehicle of claim 16, further comprising:

a fourth sprocket fixedly mounted to the jackshaft;

a second freewheel rotatably mounted to the hub, the freewheel having a sprocket;

a fourth chain engaged to said hub freewheel sprocket and said fourth motor sprocket for transferring rotary motion from the hub freewheel to the fourth motor sprocket;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

18. The electric drive vehicle of claim 17, wherein said vehicle is a bicycle and wherein said hub is a multi-speed hub.

19. The electric drive bicycle of claim 18, wherein said multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

20. The electric drive bicycle of claim 18, wherein said multi-speed hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the chain to engage any of said sprockets while riding said bicycle.

21. The electric drive vehicle of claim 17, wherein said electric motor is a brush-less, direct current, slow speed, gear-less, bicycle wheel hub motor.

22. The electric drive vehicle of claim 16, further comprising:

a fourth sprocket fixedly mounted to the hub;

a second freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a fourth chain engaged to said fourth hub sprocket and said second jackshaft freewheel sprocket for transferring rotary motion from the hub jackshaft;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

23. The electric drive vehicle of claim 22, wherein said vehicle is a bicycle and wherein said hub is a multi-speed hub.

24. The electric drive bicycle of claim 23, wherein said multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

25. The electric drive bicycle of claim 23, wherein said multi-speed hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the chain to engage any of said sprockets while riding said bicycle.

26. The electric drive vehicle of claim 22, wherein said electric motor is a brush-less, direct current, slow speed, gear-less, bicycle wheel hub motor.

27. A method for providing an electric drive on a pedal powered vehicle, the vehicle having a frame and a wheel with a hub and sprocket, and a pedal crank with a sprocket, comprising:

providing an electric motor, having an axle and a rotatable outer case;

fixedly mounting the axle of said motor to the frame of said vehicle;

fixedly mounting a sprocket to the case of said motor;

fixedly mounting a freewheel having a sprocket to the case of said motor;

engaging a drive chain around said sprocket on said motor and the sprocket on the hub;

engaging a pedal chain around the sprocket on said freewheel and the sprocket on the pedal crank;

whereby either said motor or said pedal crank can drive said vehicle independently or in unison.

28. The electric drive method of claim 27, wherein said hub is a multi-speed hub.

29. The electric drive method of claim 28, wherein said vehicle is a bicycle and multi-speed hub is of the type that has internal gears that can be shifted while riding said bicycle.

30. The electric drive method of claim 28, wherein said multi-speed rear hub is of the type that has two or more sprockets on a freewheel, and a corresponding derailleur that can shift the said drive chain to any of said sprockets while riding said bicycle.

31. The electric drive method of claim 27, wherein said electric motor is of the brush-less, direct current, slow speed, gear-less type.

32. The method of claim 27 further comprising:

rotatably mounting a second freewheel having a sprocket to the case of said motor;

fixedly mounting a second sprocket to the hub;

engaging a third chain around said hub sprocket and said second motor freewheel sprocket;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison, and whereby said wheel can drive said motor for regenerative braking.

33. The method of claim 27 further comprising:

rotatably mounting a second freewheel having a sprocket to the hub;

fixedly mounting a second sprocket to the case of said motor;

engaging a third chain around said hub freewheel sprocket and said second motor sprocket;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison,

and whereby said wheel can drive said motor for regenerative braking.

34. A mechanism for providing an electric drive on a pedal powered vehicle, the vehicle having a frame and a wheel with a hub and sprocket, and a pedal crank with a sprocket, comprising:

an electric motor, having an axle and a rotatable outer case, the motor mounted to the frame by the axle;

a sprocket fixedly mounted to the outer case of said motor;

a freewheel rotatably mounted to the outer case of said motor, the freewheel having a sprocket;

a first chain engaged to said motor sprocket and a sprocket on the hub for transferring rotary motion from the motor sprocket to the hub sprocket; and

a second chain engaged to said freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the freewheel sprocket ;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison.

35. A method for providing an electric drive on a pedal powered vehicle, the vehicle having a frame and a wheel with a hub and sprocket, and a pedal crank with a sprocket, comprising:

providing an electric motor, having an axle;

fixedly mounting the motor to the frame of said vehicle;

rotatably mounting a jackshaft to the frame;

fixedly mounting a first sprocket to the axle of said motor;

fixedly mounting a second sprocket to the jackshaft;

engaging a first chain around said first motor sprocket and the sprocket on the jackshaft;

rotatably mounting a first freewheel to the jackshaft, the freewheel having a sprocket;

engaging a second chain around said jackshaft freewheel sprocket and said pedal sprocket;

fixedly mounting a third sprocket to the jackshaft; and

engaging a third chain around said third jackshaft sprocket and said hub sprocket;

fixedly mounting a fourth sprocket to the jackshaft;

rotatably mounting a second freewheel to the hub, the freewheel having a sprocket;

engaging a fourth chain around said hub freewheel sprocket and said fourth jackshaft sprocket;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

36. A method for providing an electric drive on a pedal powered vehicle, the vehicle having a frame and a wheel with a hub and sprocket, and a pedal crank with a sprocket, comprising:

providing an electric motor, having an axle;

fixedly mounting the motor to the frame of said vehicle;

rotatably mounting a jackshaft to the frame;

fixedly mounting a first sprocket to the axle of said motor;

fixedly mounting a second sprocket to the jackshaft;

engaging a first chain around said first motor sprocket and the sprocket on the jackshaft;

rotatably mounting a first freewheel to the jackshaft, the freewheel having a sprocket;

engaging a second chain around said jackshaft freewheel sprocket and said pedal sprocket;

fixedly mounting a third sprocket to the jackshaft; and

engaging a third chain around said third jackshaft sprocket and said hub sprocket;

fixedly mounting a fourth sprocket to the hub;

rotatably mounting a second freewheel to the jackshaft, the freewheel having a sprocket;

engaging a fourth chain around said hub sprocket and said second jackshaft freewheel sprocket;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

37. An electric drive vehicle comprising:

a frame;

a wheel, having a hub with at least one sprocket, the wheel rotatably mounted to the frame;

a pedal crank assembly rotatably mounted in the frame;

a pedal sprocket fixedly attached to the pedal crank assembly;

an electric motor, having an axle, the motor mounted to the frame;

a jackshaft rotatably mounted to the frame;

a speed reduction drive mechanism engaged to said motor and the jackshaft for transferring rotary motion from the motor to the jackshaft;

a first freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a first chain engaged to said jackshaft freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the jackshaft;

a first sprocket fixedly mounted to the jackshaft; and

a second chain engaged to said first jackshaft sprocket and said hub sprocket for transferring rotary motion from the jackshaft to the wheel;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison.

38. The electric drive vehicle of claim 37, further comprising:

a second sprocket fixedly mounted to the jackshaft;

a second freewheel rotatably mounted to the hub, the freewheel having a sprocket;

a third chain engaged to said hub freewheel sprocket and said second jackshaft sprocket for transferring rotary motion from the hub freewheel to the jackshaft;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

39. The electric drive vehicle of claim 37, further comprising:

a second sprocket fixedly mounted to the hub;

a second freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a third chain engaged to said second jackshaft freewheel sprocket and said second hub sprocket for transferring rotary motion from the hub to the jackshaft freewheel;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

40. A mechanism for providing an electric drive on a pedal powered vehicle, the vehicle having a frame and a wheel with a hub and sprocket, and a pedal crank with a sprocket, comprising:

an electric motor, having an axle, the motor mounted to the frame;

a jackshaft rotatably mounted to the frame;

a speed reduction drive mechanism engaged to said motor and the jackshaft for transferring rotary motion from the motor to the jackshaft;

a first freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a first chain engaged to said jackshaft freewheel sprocket and said pedal sprocket for transferring rotary motion from the pedal sprocket to the jackshaft;

a first sprocket fixedly mounted to the jackshaft; and

a second chain engaged to said first jackshaft sprocket and said hub sprocket for transferring rotary motion from the jackshaft to the wheel;

whereby either said motor or said pedal crank can drive said vehicle, independently or in unison.

41. The mechanism of claim 40, further comprising:

a second sprocket fixedly mounted to the jackshaft;

a second freewheel rotatably mounted to the hub, the freewheel having a sprocket;

a third chain engaged to said hub freewheel sprocket and said second jackshaft sprocket for transferring rotary motion from the hub freewheel to the jackshaft;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

42. The mechanism of claim 42, further comprising:

a second sprocket fixedly mounted to the hub;

a second freewheel rotatably mounted to the jackshaft, the freewheel having a sprocket;

a third chain engaged to said second jackshaft freewheel sprocket and said second hub sprocket for transferring rotary motion from the hub to the jackshaft freewheel;

whereby said wheel can drive said jackshaft and said motor for regenerative braking.

43. A method for providing regenerative braking on an electric drive, pedal powered vehicle, the vehicle having a frame, a wheel with a hub and sprocket, and an electric motor having a rotating portion which is operably connected to the wheel sprocket, comprising the steps of:

providing a freewheel having a sprocket, rotatably mounted to the hub;

providing a sprocket fixedly mounted to the rotating portion of said motor;

providing a chain engaged to said hub freewheel sprocket and said motor sprocket for transferring rotary motion from the hub freewheel to the motor sprocket;

whereby said rear wheel can drive said motor through said freewheel, chain, and sprocket, for regenerative braking.

44. A method for providing regenerative braking on an electric drive, pedal powered vehicle, the vehicle having a frame, a wheel with a hub and sprocket, and an electric motor having a rotating portion which is operably connected to the wheel sprocket, comprising the steps of:

providing a freewheel having a sprocket, rotatably mounted to the rotating portion of said motor;

providing a sprocket fixedly mounted to the hub;

providing a chain engaged to said motor freewheel sprocket and said hub sprocket for

transferring rotary motion from the hub to the motor;

whereby said rear wheel can drive said motor through said sprocket, chain, and freewheel for regenerative braking.